

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>12581190/EJH</b>	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"><b>FOR FURTHER ACTION</b></div> <div style="text-align: right;">see Form PCT/ISA/220 as well as, where applicable, item 5 below.</div> </div>	
International application No. <b>PCT/AU2005/000372</b>	International filing date ( <i>day/month/year</i> ) <b>16 March 2005</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>16 March 2004</b>
Applicant <b>AGT BIOSCIENCES LIMITED et al</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **7** sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box No. II).

3. ☐ **Unity of invention is lacking** (See Box No. III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**Ligands of the molecule FIT (AGT-121) and their pharmaceutical use**

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

**Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
  - a. type of material
    - ☒ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material
    - ☒ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing
    - ☒ contained in the international application as filed
    - ☐ filed together with the international application in computer readable form
    - ☐ furnished subsequently to this Authority for the purposes of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2005/000372

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: **1-9, 12-23 (in part)**  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
The above claims encompass an indefinite and unsupported range of compounds such that a search covering the full breadth of these claims is not feasible.
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**Box No. IV Text of the Abstract (Continuation of item 5 of the first sheet)**

Identification of molecules which modulate *inter alia* obesity, anorexia, weight maintenance, inflammation and/or metabolic energy levels in a subject are described which particularly relate to a protein molecule called "FIT", previously known as "AGT-121". Ligands of "FIT" as well as antagonists and agonists of "FIT"-ligand interaction are proposed to modulate *inter alia* obesity, anorexia, weight maintenance, inflammation and/or metabolic energy levels in a subject. Methods of treatment and prophylaxis and pharmaceutical compositions useful in modulating *inter alia* obesity, anorexia, weight maintenance, inflammation and/or metabolic energy levels are also provided.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2005/000372

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: C07H 21/02, 21/04; C07K 14/47; A61K 38/17, 48/00; A61P 3/04, 3/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

SEE BELOW UNDER "ELECTRONIC DATA BASE CONSULTED"

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN File Dgene: Subsequence search based on SEQ ID 2; STN Files CA, Medline, Wpids, Biosis: Keywords: AGT-121, endophilin,  $\beta$ arrestin, AP2 complex; ANGIS: Subsequence search based on SEQ ID 2

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 2003/033513 A1 (AUTOGEN RESEARCH PTY LTD et al) 24 April 2003 Whole Document	1-7, 9, 12-22 10,11
X	Trevaskis J. L et al, Diabetologia Vol. 46, Supplement 2 (August 2003), 18 <sup>th</sup> Congress of the International Diabetes Federation, Paris France, August 24-29 2003, International Diabetes Federation, "AGT-121, a novel hypothalamic gene implicated in the development of obesity", p A226-A227 Abstract	9, 13-17, 21
X	WO 2003/039574 A1 (DEVELOGEN AKTIENGESELLSCHAFT FUR ENTIWICKLUNGSBIOLOGISCHE FORSCHUNG) 15 May 2003 Whole Document	1-6, 8, 9, 12-23



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
27 May 2005Date of mailing of the international search report  
- 8 JUN 2005Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaaustralia.gov.au  
Facsimile No. (02) 6285 3929Authorized officer  
**R.L. POOLEY**  
Telephone No : (02) 6283 2242

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2005/000372

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Farsad K et al, The Journal of Cell Biology, Vol. 155 (2), 15 October 2001, "Generation of high curvature membranes mediated by direct endophilin bilayer interactions", pages 193-200 Whole Document	1-6, 8, 9
X	WO 2003/031594 A2 (GENOME THERAPEUTICS CORPORATION) 17 April 2003 See especially pages 87, 119, 210	1-6, 8, 9, 12-21, 23
X Y	Tang Y et al, PNAS, Vol. 96 (22), 26 October 1999, "Identification of the endophilins (SH3p4/p8/p13) as novel binding partners for the $\beta$ 1-adrenergic receptor", pages 12559-12564 Whole Document	1-6, 8 10, 11

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU2005/000372**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
WO	2003/033513	CA	2463578	EP	1446414	IL	161294
WO	2003/039574	EP	1441752	JP	2005507948		
WO	2003/031594	CA	2462209	EP	1516063	US	2004043021
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.							
END OF ANNEX							